



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/086,775

03/01/2002

Paul Joseph Berlowitz

JJD-0101

8963

27810

7590

04/19/2007

ExxonMobil Research & Engineering Company

P.O. Box 900

1545 Route 22 East

Annandale, NJ 08801-0900

EXAMINER

TOOMER, CEPHIA D

ART UNIT

PAPER NUMBER

1714

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

04/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/086,775

Applicant(s)

BERLOWITZ ET AL.

Examiner

Cephia D. Toomer

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-10 and 12-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-10 and 12-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This Office action is in response to the amendment filed February 1, 2007 in which claims 1, 9 and 12 were amended and claims 12-16 were added.

The rejection of the claims under 35 U.S.C. 112, second paragraph is withdrawn in view of the amendment to the claims and Applicant's arguments.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 15 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not support the range about 53 to 91.5% for the particulate matter emissions. Applicant has shown two data points. There is nothing to indicate that the same amount of non-ionic surfactant was used or that the same fuel was used to prepare these emulsified fuels. Clearly, there is something different about the fuels otherwise the results would be the same. Therefore, the examiner maintains that the data do not provide support for the claimed range.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 5-10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO9963025.

WO teaches a hydrocarbon in water emulsion comprising diesel fuel or Fischer-Tropsch derived fuel, water, alcohol and a surfactant. The droplets are less than 10 micron in size (see abstract; page 3, lines 20-22; page 7, lines 22-32; page 23, lines 19-23). WO teaches that the fuel emulsion of his invention relates to reduced nitrogen oxide and particulate emissions (see page 2, lines 26-29). The amount of hydrocarbon is from 43-70% by weight and the amount of water is from 28-55 % by weight (see col. 3, lines 23-31). The amount of surfactant is about 0.5% (see Examples). WO teaches the limitations of the claims other than the differences that are discussed below.

In the first aspect, WO differs from the claims in that WO fails to teach how the fuel of its invention compares to Swedish Class I Diesel Fuel. However, no unobviousness is seen in this difference because WO '025 teaches a fuel that contains all of the claimed components that Applicant has set forth in an emulsified fuel composition and WO '025 uses the fuel in the same environment as Applicant. Therefore, it would be reasonable to expect that the emulsified fuel of WO '025 would

Art Unit: 1714

reduce particulate emissions as compared to the Swedish fuel, absent evidence to the contrary.

In the second aspect, WO differs from the claims in that it fails to teach the claimed particle size. However, WO teaches that the droplets are 10 microns or less and this teaching suggests a particle size of 0.1 to about 1.0 micron. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the particles size through routine experimentation for the best results. As to optimization results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness. See *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

In the third aspect, WO differs from the claims in that it does not specifically teach the viscosity of the fuel. However, since WO teaches an emulsified fuel containing the same components that are within the same range as Applicant, it would be reasonable to expect that the viscosity of the fuel emulsion would be the same or similar to that of the present invention, absent evidence to the contrary.

Response to Arguments

5. Applicant's arguments have been fully considered but they are not persuasive.

Art Unit: 1714

Applicant argues that WO '025 teaches a macro-emulsion having particles of 10 micron or less. Applicant argues that macro-emulsions are different than the emulsions used in the present invention because Applicant is using a micro-emulsion.

The examiner has provided two independent sources for the definitions of macro-emulsions and micro-emulsions. Both references teach that a micro-emulsion has a particle size of less than 0.1 micron. Nowhere in Applicant's specification is it taught that the hydrocarbon-in water emulsion is a micro-emulsion. The term does not even appear in the specification. Therefore, Applicant's argument is not persuasive because Applicant is also teaching a macro-emulsion.

Applicant argues that at most WO '025 reduces PM emissions by 6 to 44%, whereas in the present invention the PM emissions are reduced 53 to 91.5% lower than the Swedish Class I diesel.

Applicant's base claims are devoid of such percentages and WO '025 does teach reduction of PM emissions. Therefore, Applicant's argument is not persuasive.

Applicant argues that the macro-emulsion of WO '025 would have a particle size distribution over the entire 0.1-10 micron range whereas the present invention has shown unexpected results wherein the fuel particles are substantially uniform and are in the 0.1 to 1.0 micron range.

There is nothing in WO that teaches or suggests that the particle distribution is over the entire range of 0.1-10 microns. WO '025 teaches that the particles are of a size of less than 10 microns. This teaching suggests to the skilled artisan that the particle size may be optimized to obtain the best results. The skilled artisan preparing

Art Unit: 1714

an emulsified fuel recognizes the importance of the particles size and would adjust the size of the particles accordingly. If this were not true then WO '025 would have stated that the particles must all be one size. Furthermore, Applicant has not compared the present invention to that of WO '025. Therefore, Applicant has no data to suggest that unexpected results are obtained when the fuel particles are substantially uniform and are in the 0.1 to 1.0 micron range.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

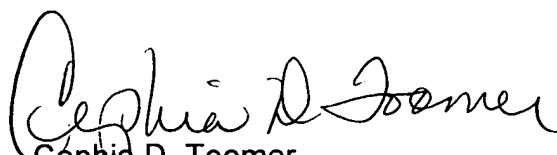
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

Art Unit: 1714

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Cephia D. Toomer
Primary Examiner
Art Unit 1714

10086775\20070413